A57.9: 31/8

MARCH 1966
VOL. 31 NO. 8

Soil Conservation

DEVOTED TO THE WISE USE OF LAND AND WATER RESOURCES

QUALITY OF ENVIRONMENT
A statement by the Secretary of Agriculture
Page 171

Wildlife for Pleasure and Income
This month's special theme

SOIL CONSERVATION SERVICE U. S. DEPARTMENT OF AGRICULTURE

Quality . . .

The Secretary of Agriculture's statement (p. 171) on quality in environment makes explicit a philosophy that has underlain soil conservation work from the beginning.

In earlier days, benefits were usually translated in terms of production and income, for those were the main concerns of people interested in the land.

In a more affluent era, urban people as well as farmers are awakening to other values of land and water resources.

The whole Nation increasingly looks to the countryside as a place to live and a source of physical and spiritual refreshment.

Consistent with the principle that *resources are for people*, the emphasis in conservation and land use shifts with the changing needs and concerns of our population.

Accordingly, quality of the human environment in rural America is the avowed goal of modern conservation.

Planning: Independent firsthand accounts in this issue by two conservationists who help landowners plan the use of their resources illustrate the new trend to enhance esthetic and recreational values.

Biologist David Allan (p. 183) tells how New Hampshire district cooperators cherished and improved marshland on their properties.

And Woodland Conservationist Ross Mellinger's picture story (p. 180) speaks eloquently of the appeals of woodland that often outweigh commercial values in planning decisions.

COVER: A guide accompanies a paying hunter along a field strip planted for pheasant cover on a shooting preserve in the Northern Virginia Soil Conservation District.

Soil Conservation

Devoted to the wise use of land and water resources

MARCH 1966 **VOL. 31, NO. 8**

171 The Quality of Our Environment
By Orville L. Freeman

175 Income From Hunting Rights
Sportsmen turn to pay-as-you-go recreation
By Wade H. Hamor

177 Wildlife Will Be Served by Soil Survey Report
By H. E. Grogger

179 A Shooting Preserve in Action
By Verne E. Davison

180 New Uses for Farm Woodlands
Today's owners put varied aims in conservation plans
By Ross H. Mellinger

183 This Is a Marsh—Mark it Well
By David N. Allan

185 Trout Is New Cash Crop for Tennessee Farm

187 Potomac Model Plan Stresses Land Treatment

188 Farm Plans Build a New Community

189 Conservation Profile
Seavey A. Piper, Maine

189 Review
Quality of the Environment; Trail Planning and Layout; Wildlands in Our Civilization; Wildlife Biology; New Publications

191 From the Administrator
Model in the Potomac; Cooperation for Wildlife

192 Boiling Down the Maple Sap

SOIL CONSERVATION is the official organ of the Soil Conservation Service, published monthly by direction of the Secretary of Agriculture as administrative information required for proper transaction of the public business. The printing of this publication was approved by the Bureau of the Budget July 25, 1963.

ORVILLE L. FREEMAN — Secretary of Agriculture
JOHN A. BAKER — Assistant Secretary of Agriculture
DONALD A. WILLIAMS — Administrator, Soil Conservation Service

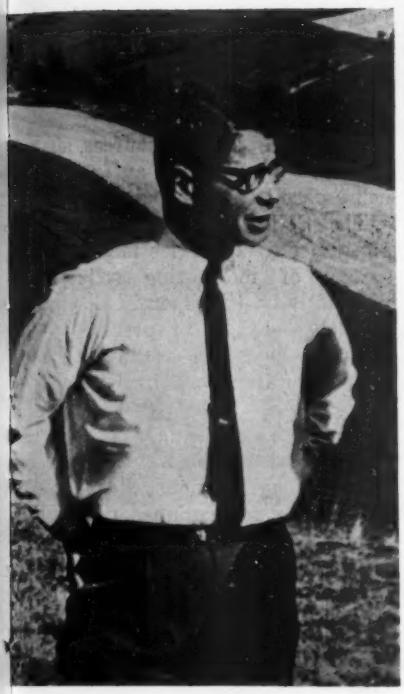
Prepared in the Division of Information, Soil Conservation Service,
U. S. Department of Agriculture, Washington, D. C. 20250

BEN O. OSBORN, Editor
GEORGIE A. KELLER, Editorial Assistant

Reprint permission: Contents of this magazine may be reprinted without special permission. Credit is not required but is appreciated. Photos available on request.

Commercial names: Mention of commercial enterprises or brand names does not constitute endorsement or imply preference by the Department of Agriculture.

Subscription: $1.75 per year, $2.50 foreign. Single copy, 15 cents. Discount of 25 percent on orders of 100 or more sent to same address. Order direct from Superintendent of Documents, Government Printing Office, Washington, D. C. 20402.



The Quality of Our Environment

By Orville L. Freeman

LAST NOVEMBER the Environmental Pollution Panel of the President's Science Advisory Committee presented to the President a definitive report based on 15 months' study of the damaging effects of man's actions on his environment.

The report, *Restoring the Quality of Our Environment,* is a penetrating analysis and assessment of an interlinked tangle of problems that affect every citizen.

As the President stated on receiving the report:

"Ours is a Nation of affluence. But the technology that has permitted our affluence spews out vast quantities of wastes and spent products that pollute our air, poison our waters, and even impair our ability to feed ourselves. At the same time, we have crowded together into dense metropolitan areas where concentration of wastes intensifies the problem.

"Pollution now is one of the most pervasive problems of our society. With our numbers increasing, and with our increasing urbanization and industrialization, the flow of pollutants to our air, soils, and waters is increasing. This increase is so rapid that our present efforts in managing pollution are barely enough to stay even, surely not enough to make the improvements that are needed."

The report set forth 13 "principles" and made nearly 100 specific recommendations of actions, studies, measurements, research and development activities, and manpower measures.

The President immediately directed the executive departments and agencies, including the Department of Agriculture, to consider the recommendations and report to him on ways they could help restore the quality of our environment.

As defined by the panel, the problem of environmental pollution—"the unfavorable alteration of our surroundings"—deeply involves the Department of Agriculture and all resource conservation agencies and organizations.

The Department concurs generally with the recommendations set forth. We have suggested specific ways in which we can increase our activities in this area, including some for which additional funds, manpower, and legislative authority would be necessary.

The review of our activities in relation to the panel's recommendations also highlights an impressive array of ongoing programs that contribute to quality of environment.

The Department of Agriculture is long experienced in modifying environment. Through research and education we have shown farmers how to make a productive environment for plants and animals, giving the American people an unrivaled abundance of food and fiber.

It is time to turn our attention more to *environment for people.*

After all, what is of more concern to the Department of Agriculture than the condition of the lands and waters of rural America? Rural America is home of a fourth of our people and playground for the rest, site of our farms and ranches and a growing number of

DEFINITION

Environmental pollution is the unfavorable alteration of our surroundings, wholly or largely as a byproduct of man's action, through direct or indirect effects of changes in energy patterns, radiation levels, chemical and physical constitution and abundances of organisms. These changes may affect man directly, or through his supplies of water and of agricultural and other biological products, his physical objects or possessions, or his opportunities for recreation and appreciation of nature.—Report of the President's Science Advisory Committee on "Restoring the Quality of Our Environment."

industries, and the brightest hope for living space for the millions of additional people to be added to our population before the end of the century.

Already our great cities are showing signs of floundering under the weight of too many people in too little space and the congestion and contamination they produce. Increasing population only compounds the problems of environmental pollution—more smog in the air and more filth in the water, more tangled traffic clogging the streets, and more urban sprawl engulfing the open land nearby.

Some of the problems on which the Department of Agriculture is working to improve the quality of our environment are pesticides, soil pollution, sediment and dust, floods, and urban land use. These efforts can be expanded and accelerated in response to the recommendations of the President's Science Advisory Committee.

Of all the problems treated by the report, perhaps none has been the subject of greater public concern than the use of pesticides.

In research, education, and regulation, the Department has taken positive steps to increase the efficiency and safety of pesticides. We have made considerable progress in advancing proposals of earlier reports on this subject, including a study by another panel of the President's Science Advisory Committee.

In recent years we have expanded our efforts to develop effective alternative pest control weapons and techniques. This effort is being continued.

Aside from public concern about the effects of the use of pesticides, the possibility of soil pollution from this and other chemical sources is a major concern of the Department.

We have research and monitoring programs to evaluate and establish existing levels of a variety of pollutants, although not on the scale needed. New legislation would be required to authorize the Department to administer control and abatement programs.

Studies are being conducted, for example, to distinguish between lead naturally present in soil and that added from other sources, such as from the exhaust of automobiles using gasoline with lead additives.

The Soil Conservation Service and the Forest Service maintain a system of monitoring soils for radioactivity. Fieldmen in all parts of the country are prepared to detect radiological contamination of soils, water, and foodstuffs in emergencies.

Scientists and technicians of the Department also monitor soil and water at 55 locations throughout the Nation for residues traceable to the use of agricultural chemicals. Intensive studies at 5 locations deal with such vital questions as translocation to plants, movement in drainage water, and effects on nontarget organisms.

There are other pollution problems, in addition to pesticides and other chemicals, that concern agri-

PRINCIPLES . . . From the Report on the Quality of Our Environment

1. The public should come to recognize individual rights to quality of living, as expressed by the absence of pollution, as it has come to recognize rights to education, to economic advance, and to public recreation.

2. The responsibility of each pollutor for all forms of damage caused by his pollution should be effectively recognized and generally accepted. There should be no "right" to pollute.

3. The roles of all governmental authorities, local, State, and Federal, in pollution problems should be complementary and mutually supporting.

4. Federal agencies should give special attention, in all operations they conduct, support, or control, to avoiding and managing pollution, both to reduce it and as an example to others.

5. All agencies and organizations concerned with pollution should strengthen programs that lead to better public understanding of pollution and its problems.

6. All concerned should recognize the quality of human life and the presence and growth of other living things as the major values currently damaged by pollution.

7. The special importance of the automobile as a source of pollution problems should be clearly recognized.

8. As our pollution problems became steadily more serious, it should be generally recognized that we must consider our balances and choices within successively larger and more complex systems.

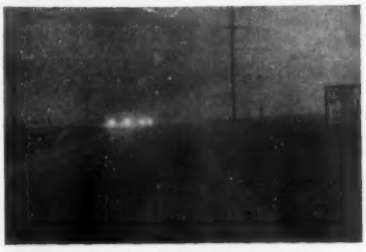
9. Each department or agency having responsibility for both enforcement and research in pollution should provide administrative and budgetary separation sufficient to minimize interference between its research and development activities on the one hand, and its investigative and enforcement activities on the other.

10. In making decisions about resource use and community development, including transportation systems, urban renewal, irrigation, drainage, and agricultural practices, information about effects and behavior of pollutants should be an essential consideration.

11. The filling-in of shallow waters essential in life cycles of fishes and shellfish be regarded as an important kind of pollution.

12. The control of pest populations should increasingly depend on an integrated combination of pesticide use with a wide variety of bioenvironmental techniques.

13. Unnecessary use of pesticides should be avoided whenever possible.



culture.

Erosion of the land, both rural and urban, pours countless tons of sediment into lakes and streams, rendering water unhealthy and unusable for man, animals, and fish. Lately, a major source of sediment has been from the effects of construction in suburban housing and industrial areas and on highways.

Soil disturbed during construction also is carried aloft by winds. The dust further pollutes the air, adding to human discomfort. Dust from soil blowing in the Great Plains and other wind erosion areas is recognized as the cause of respiratory disorders and a hazard to automobile traffic as well as a general irritant and inconvenience.

The Department has long carried on major programs of erosion control and soil conservation. The technical assistance provided by the Soil Conservation Service to local conservation districts; cost sharing and credit made available to individual land owners and groups through the Agricultural Conservation Program and Farmers Home Administration; watershed projects and the Great Plains Conservation Program—these and many other activities of the Department are making substantial progress in correcting environmental pollution caused by erosion and uncontrolled runoff.

For example, it is estimated that the Department's program for erosion control in the Potomac River basin could reduce sediment in the stream by 50 percent. Acceleration of land treatment on the entire watershed is recommended by the Federal Interdepartmental Task Force on the Potomac as part of a comprehensive plan requested by the President to make the river that flows by the Nation's Capital "a model of scenic and recreation values for the entire country."

Problems of environmental pollution in rural America (top to bottom): Pesticides, pollution, sediment, dust, floods, and suburban sprawl.

Floodwater is another form of environmental pollution, at once the cause and the result of "unfavorable alteration of our surroundings."

As our farms, homes, industries, and towns increasingly modify the landscape and interfere with natural drainage patterns, the frequency and volume of floods also increase. The hazards to life and health, damage to property, and interruptions of daily living resulting from floods continue to pyramid wherever we place our homes and buildings in the way of uncontrolled streams.

The extensive flood prevention and watershed protection programs of the Department of Agriculture are aimed at avoiding and correcting such damages in all the Nation's watersheds.

The small watershed projects under the Watershed Protection and Flood Prevention Act give local communities the means of establishing orderly control and development of water resources on local watersheds.

The Department also participates with other Federal and State agencies in river basin surveys and planning designed to bring widespread solutions of flood and water use problems.

These action programs are supported by research involving such studies as (1) establishing relationships between sediment yields and erosional processes, (2) understanding and controlling the deposition of sediment in reservoirs, (3) minimizing or correcting gullying, channel cutting, or streambank erosion on watersheds, and (4) determining the extent to which sediment in streamflow may serve as the carrier of undesirable wastes or residues.

The report of the President's Science Advisory Committee underscores the importance of these activities to a quality environment.

The growth of urban areas is creating a whole new complex of unsatisfactory living conditions be-

cause of unintentioned misuse of the land or disregard for soil suitabilities and limitations.

Besides the erosion and sedimentation that result from extensive scalping of topsoil during construction, flooding problems often result from interrupting natural drainageways or building on waterlogged soils. Individual sewage disposal systems fail to function when located on unsuitable soils. Many other unforeseen difficulties plague the householder or developer who proceeds without adequate knowledge of soil and site conditions.

The Department, through the soil surveys and technical services of the Soil Conservation Service, increasingly is helping suburban land use planning agencies and individual builders in urban fringe areas cope with these problems.

We in the Department endorse the spirit and intent of the report on *Restoring the Quality of Our Environment.* This is an historic goal of the Department.

The report strengthens our will to extend the concept of conservation and resource development beyond the aims of satisfying material wants. Through emphasis on enhancement of natural beauty, improvement of recreation resources, preservation of wildlife and natural areas, and related goals in land use planning and conservation, our efforts underscore the objective of the Environmental Pollution Panel of the President's Science Advisory Committee.

The Department of Agriculture has a unique responsibility in the effort to safeguard our environment, because it is the principal Government agency authorized to carry on conservation programs affecting the renewable resources on privately owned land—and that is where most of our people live.

Through its working relationships with the nearly 3,000 soil conservation districts that blanket the country, and a growing number of small watershed projects, the Department gives counsel and assistance to land owners and operators. It is they who will finally decide, through their individual actions, the character and quality of our daily surroundings.

Through the Soil Conservation Service, the Department provides private groups and public officials with detailed soil surveys and information as a basis for communitywide land use planning and the conservation treatment of individual properties.

It provides technical assistance in planning small watershed and resource conservation and development projects and can share the cost and provide credit to help finance the needed installations and treatments.

By sharing with landowners the cost of soil and water conservation practices of benefit to the general public, the Agricultural Conservation Program of ASCS encourages improvements in the rural landscape that might not otherwise be made. These measures include practices specifically designed to benefit wildlife and increase outdoor recreation resources. The Farmers Home Administration provides credit for soil and water conservation work and recreation developments.

Through its other cost-sharing, credit, and educational programs the Department helps individual land owners and groups conserve and restore essential resources, all contributing to the quality of the environment where people live.

The New Conservation, as the President so eloquently defined it in his Message on Natural Beauty, is "a creative conservation of restoration and innovation. Its concern is not with nature alone, but with the total relation between man and the world around him. Its object is not just man's welfare but the dignity of man's spirit."

Changing the rural environment is more than simply keeping what we have left. It is more than restoring what we once had. We have before us the goal and the challenge of making the rural environment what it can be—an environment so inviting, so pleasant, so fruitful that it will beckon the people of the concrete and asphalt cities to return to the open spaces—and to bring their families, their jobs, and their industries with them.

This is the new concept of conservation. And it is in harmony with the report on *Restoring the Quality of Our Environment.* ♦

A conservation-treated watershed is an inviting rural environment.

Income From Hunting Rights

Sportsmen turn to pay-as-you-go recreation where landowners provide for wildlife

By Wade H. Hamor
Biologist, Regional Technical Service Center, SCS, Lincoln, Nebr.

Goose shooting from cornstalk-covered blinds is a paying sport in the Kent County Soil Conservation District near the Chesapeake Bay in Maryland.

RECREATION as an income-producing resource on the farm or ranch is now widely recognized. Hunting is one of the most popular of the activities that lend themselves to charging of fees. Landowners are learning that they have, on their properties, a salable recreation product in the "right to enter" or "right to hunt."

The recent emphasis on the charging of fees for the use of public recreation land is doing much to break the tradition of free hunting on private land. In addition, the economics of farming and the actions of hunters themselves are guiding landowners into charging for "trespass" rights.

An economic trend

Land values are steadily rising and farm operating costs are increasing. As a result, operators must make each acre more productive of cash income. Because of competition for hunting opportunities, many hunters are reserving good areas for themselves through the use of hunting leases with farmers and ranchers.

In 1964 some Illinois farmers were receiving $0.33 to $2 an acre for pheasant hunting rights. One farmer was getting $3.75 an acre but was managing the land for pheasant food and cover. Also, he was mowing strips through the cover for easier hunting and higher hunter success.

Another Illinois farmer leased 200 acres of his 400-acre farm on a seasonal basis to pheasant hunters at $1 an acre. On the remaining 200 acres, he charged a daily fee ranging from $10 a hunter a day at the beginning of the season to

A few rows of corn left standing near good winter cover helps wildlife through the winter months.

$5 a day for the latter part of the season. His gross return on the 400 acres was about $1.16 an acre. Cash expenses for advertising, liability insurance, and associated costs amounted to about $0.09 an acre. This farm is in good pheasant range and about 100 miles from the Chicago area.

In 1962 upland game hunting leases in Wisconsin ranged up to $1.43 an acre. At the same time leases for waterfowl hunting varied from $2.50 to $46 an acre of marshland. The average price was about $5 an acre.

A survey made in Minnesota 2 years earlier showed that farmers were receiving an average of $5.10 for each acre of wetland leased to waterfowl hunters. The top was $13. Not included in these figures were the returns from hunting on "waterfowl passes." These ranged from $25 to $2,000 a year. Pits and blinds built by farmers in good waterfowl areas now lease for up to $500 for the season.

Deer leases pay

Leases for deer hunting in Michigan have ranged up to $3.12 an acre of farmland. One leased at the rate of $100 a hunter for the season. In this instance the farmer managed the land and the deer through proper harvest of the animals, by feeding hay and grain during the winter, and by cutting trees to encourage sprout growth for summer browsing.

Daily fees for hunting deer on some Texas ranches range from $10 to $25 a hunter. Season leases are in the neighborhood of $200 a hunter. Ranchers in that State are grossing $0.75 to $1 an acre.

Hunting rights for mourning doves in some Southeastern States cost $1 to $3 a hunter a day. The rate usually depends on the amount the farmer has invested in developing good dove shooting fields on his farm.

Value of land

The value of land for hunting as compared to agricultural production is exemplified in the sale of some marshland in California about 3 years ago. A 165-acre marsh was sold to duck hunters for $1,000 an acre. Developed rice growing land in the same State sold for $450 to $650 an acre.

Quality hunting commands the highest prices. Some farms are producing maximum numbers of wildlife and adequate fall cover. Most are not.

The landowner interested in the "hunting area" type of recreation enterprise should endeavor to raise more game and improve the fall hunting cover. The changes and improvements needed must be determined for each farm and each field. Technical assistance in making this analysis is available through soil conservation districts.

The costs and returns involved in the management of hunting areas must be carefully estimated before the operator enters the business of income-producing recreation.

If he need not significantly alter his regular farming operation in order to provide habitat and hunting cover, his costs will normally remain reasonable. Advertising and added liability insurance will be the main expenses.

If, however, he must convert cropland or pasture to nesting or hunting cover, his costs will rise. To be on a sound basis economically, he must compute the costs of conversion and development against expected returns before entering this new activity. ♦

A wildlife area bordered by multiflora rose provides needed cover in a field.

Something for everybody . . .

Wildlife, Too, Will Be Served By Missouri Soil Survey Report

By H. E. Grogger
State Soil Scientist, SCS, Columbia, Mo.

THE RABBITS, deer, wild turkey, and bass of Dent County, Mo., may not know it, but they are being served, like other citizens, by the Dent County standard soil survey report.

Wildlife suitability groupings are made in the report for soils having reasonably similar needs, adaptations, and responses for the production and management of wildlife. They enable landowners to plan improvements in wildlife habitat on the basis of scientific information about soils in much the same way that farmers use capability groupings showing hazards and opportunities in farming and ranching.

Dent County, located in the heart of the Missouri Ozarks, has always had its fair share of wildlife. In addition to the kinds already mentioned, fox, quail, mourning dove, squirrel, trout, bluegill, and a plentiful supply of resident and migratory song birds occupy the county.

"Research has pointed out the importance of the soil in planning improved wildlife habitat," says Kenneth R. Hicks, field service coordinator of the Missouri Department of Conservation. So citizens of Dent County decided to work out a guide to better wildlife management through the use of the soil survey.

Soil Survey Party Leader Frederick L. Gilbert assisted by Dean

Scenic Ozark streams have a great potential for developing favorable wildlife habitat. This stream meanders through a narrow valley within the Clarksville soil area in Wildlife Suitability Group 10.

Farm ponds constructed on Lawrence silt loam and Lebanon silt loam are well suited for fish production. This 1½-acre pond has just yielded a 4-pound bass to a happy angler.

Morgan, local SCS soil conservationist, and by members of the survey crew, knew the soils of the county and the interests of the local people. To aid in the soil interpretations for wildlife suitability, Harold V. Terrill, biologist of the Missouri Conservation Commission, was called in.

Habitat elements and wildlife

First off, they listed the major *habitat elements* considered applicable to Dent County conditions. They received good advice from Ralph Work, a soil scientist on winter detail from New York State, where he had had experience with similar interpretations for wildlife suitability.

The Dent County group decided on eight major elements that affect local wildlife. They are grain crops, legumes and grasses, upland and lowland hardwoods, upland conifers, wetland food plants, shallow water developments, and fishponds.

Next, the technicians classified the major wildlife species adapted to Dent County into four major groups having similar habitat requirements:

(1) *Openland wildlife* — birds and mammals that like open spaces. Examples are quail, cottontail rabbit, red fox, mourning dove, and field sparrow.

(2) *Woodland wildlife* — birds and mammals that like wooded areas and woods' edges. Examples are gray fox, fox squirrel, gray squirrel, turkey, deer, ruffed grouse, raccoon, opossum, woodcock, and woodpecker.

(3) *Wetland wildlife* — birds and mammals that like marshes and swamps. Examples are beaver, muskrat, mink, raccoon, ducks, and snipe.

(4) *Pond fish*—fish species commonly stocked in small ponds, such as large-mouth bass and bluegill.

Each soil in the survey was carefully considered as to its suitability for each habitat element for each wildlife group. The suitability ratings determined the logical grouping of soils and the degree of suitability of each soil group for each of the wildlife groups.

Four degrees of suitability were recognized: Well suited, suited, poorly suited, and unsuited. These classes do not necessarily reflect the economics of producing wildlife. Rather they suggest the relative suitability of the soils for producing the wildlife habitat elements.

The rating for openland wildlife was based on the soil's potential for growing grain crops, legumes and grasses, upland and lowland hardwoods, and upland conifers.

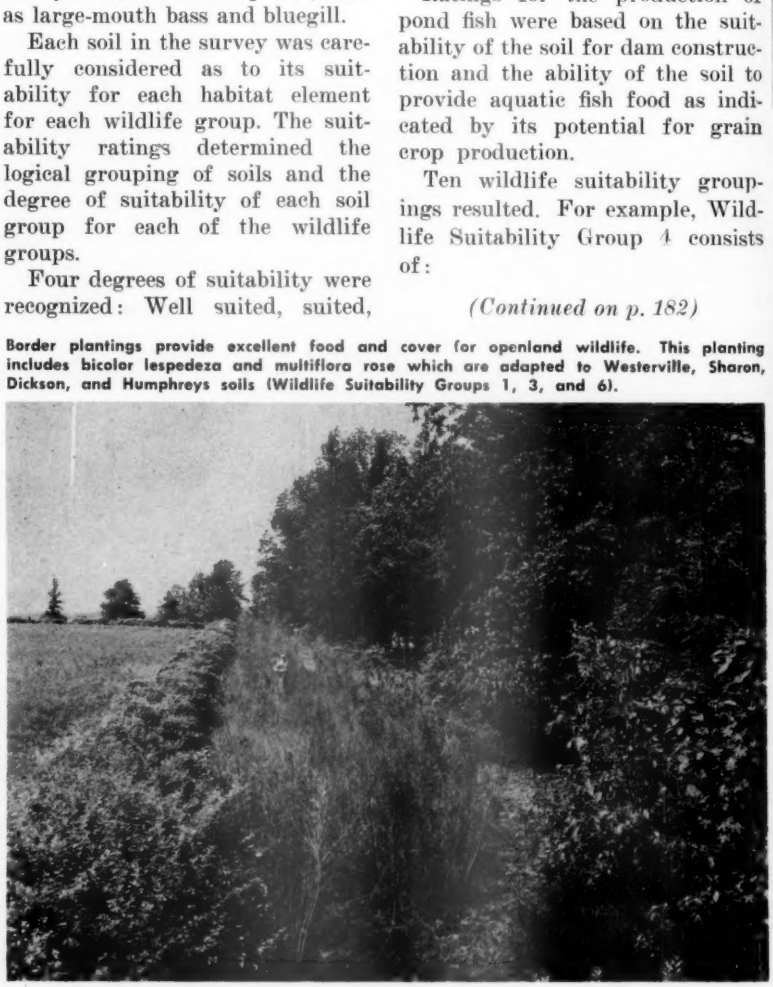
For woodland wildlife, the rating was related to the soil's potential for the establishment and growth of grain crops or wetland food plants, and its desirability for the establishment of shallow water developments and fish ponds.

Ratings for the production of pond fish were based on the suitability of the soil for dam construction and the ability of the soil to provide aquatic fish food as indicated by its potential for grain crop production.

Ten wildlife suitability groupings resulted. For example, Wildlife Suitability Group 4 consists of:

(Continued on p. 182)

Border plantings provide excellent food and cover for openland wildlife. This planting includes bicolor lespedeza and multiflora rose which are adapted to Westerville, Sharon, Dickson, and Humphreys soils (Wildlife Suitability Groups 1, 3, and 6).



A Shooting Preserve in Action

By Verne E. Davison
Biologist, Regional Technical Service Center, SCS, Portland, Oreg.

BEN MATTHEWS, one of the partners who operates the 220-acre Salome Shooting Preserve at Salome, Ariz., greeted me with a friendly smile that Sunday afternoon in October.

Ben had opened his shooting area 2 weeks before. My visit was an official one to see if he and his partner, Oral Hunter, had established a satisfactory shooting preserve according to the conservation plans we had discussed in March. They are cooperators with the Wickenburg Soil Conservation District. Ben is a supervisor.

"I have a party of hunters scheduled to arrive any minute now, Verne," Ben said, "and I want to show you the layout and talk about our operation as soon as they leave."

'Twas an unusual group for a shooting preserve party—two husbands, their wives, and 7 children, the oldest one of hunting age. Mrs. Matthews was there to help entertain the youngsters while their parents hunted.

The hunt is on

At 12:40 p.m. in 95 degree weather, Ben entered his 40-acre irrigated alfalfa field with his German shorthair hunting dog, the 2 men, 1 wife, and the older son. He had released 12 pheasants, 6 hens, and 6 cocks, about 2 hours before noon.

The first cock was flushed quickly; three or four shots were fired, and Ben's dog recovered the wounded bird beautifully.

Then a hen; two shots; dead.

A cock flushed next; two shots missed, and the full-feathered bird flew like a veteran to the shade of a mesquite thicket more than 400 yards away.

The party turned back towards the preserve pickup, the dog pointed steadily, and a third bird (cock) was killed with one shot by one of the men.

It was 1:05 p.m. Ben and the boy carried the three pheasants to the pickup and the group enjoyed cold drinks and "hunter talk" for 10 or 15 minutes.

Another swing westward through the alfalfa field soon bagged the fourth bird, a hen brought down by the lady with her second shot after missing the first. The next bird flew safely into an adjoining field of ripening pearl millet, the hunters missing with both shots fired.

As the dog pointed the seventh bird, a nearby-one flushed without drawing any fire, but the hen that flushed from the dog's point was harvested with two shots in unison. I watched another cock sneak out of the alfalfa and run across the field road to the pearl millet.

I left the hunters, for I wanted to see the holding pens and the other 200 acres of the preserve. I noticed the party returned to the camp at 2:30 p.m., and they were gone when I arrived there about 3:00. They had exchanged their seven hens and two cocks for nine cleaned birds from the refrigerator.

The cropping plan

The Salome Shooting Preserve is part of a small irrigated area in the desert valley and hills region of western Arizona. Ben Matthews and Oral Hunter grow alfalfa, cotton, pearl millet, safflower, and the best strains of lovegrass and blue panicgrass seed. They have planted several 20-foot strips of grain sorghum at 200-foot intervals across the various fields for the pheasants.

Ben and I examined the contents of the crops of the nine pheasants taken that afternoon. They had eaten milo (grain sorghum) seeds and green alfalfa leaves. Later in the evening, I watched several pheasants feeding on pearl millet and milo and watering at the irrigation ditches.

Buys pheasants

The Salome Shooting Preserve buys mature, fully feathered pheasants in lots of 500, half hens and half cocks, at $2.50 a bird as needed from commercial producers. The birds are housed and fed correctly, in suitable pens on the farm, until released for hunting. The climate is favorable for winter pheasant hunting, but it does not provide habitat for natural pheasant production.

There is moderate expense in the use of farmland for the hunting venture. The operators furnish the hunting dogs, go with the parties, and hunt only one party in any half-day. A party of two is ideal, three is more difficult, and four is considered dangerous. Coffee and cold soft drinks are free to their guests any time, and beer is offered *after* the hunt.

The charges? Twenty-five dollars a person for three pheasants, plus $6 for each additional bird, and 50 cents for cleaning each bird, if desired. A season privilege for taking up to 100 pheasants is offered at $600.

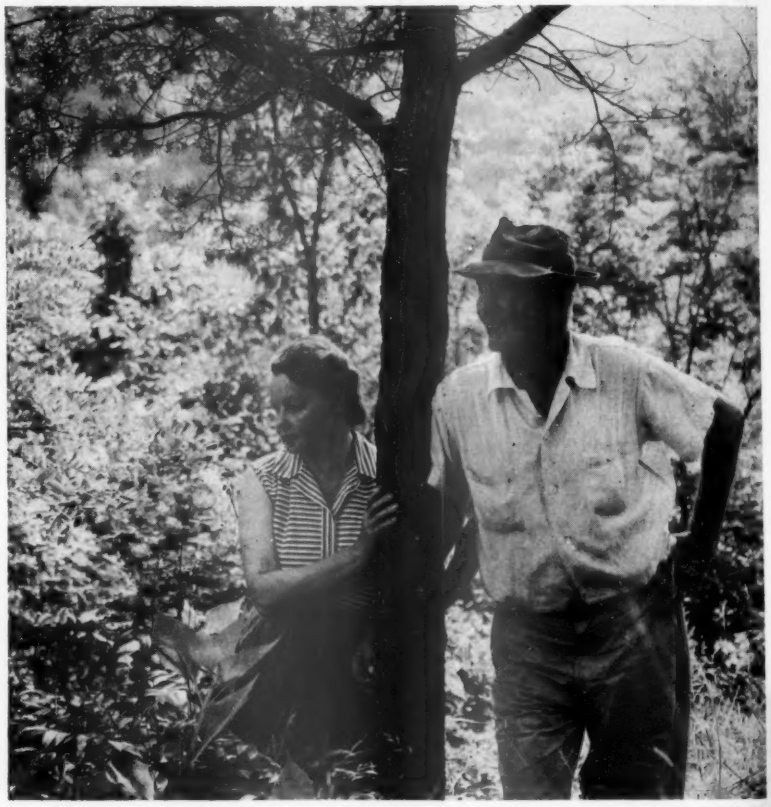
The margin of profit is minimum, but adequate to pay the investment and labor costs—enough to encourage the owners to stay in business and reward them for their services and the use of their land.

The shooting preserve is one of the answers to winter recreation and income-producing hunting in Arizona. ♦

New Uses for Farm Woodlands

Today's owners put varied aims into conservation plans

By Ross H. Mellinger
Woodland Conservationist, SCS, Morgantown, W. Va.



MOTHER NATURE has sown countless tree seeds on abandoned farmland across the country. Combined with the efforts of conservationists, this has resulted in the disappearance of thousands of acres of open land beneath the growth of millions of trees.

This has added to the already large acreage of privately owned woodland and to the number of woodland owners who have interests in their woods other than growing timber. Recreation, esthetics, and wildlife values are beginning to be strongly featured in recent conservation plans.

Whatever their interests and plans, most landowners have need of and confer with a soil conservationist who can help them develop a farm conservation plan tailored to their needs and objectives.

Once decisions are made and recorded in the basic conservation plan, the landowner is referred to a professional forester if he wishes to develop a detailed management plan for growing timber.

THEY MAY BE RETIRED. The couple (above) may say to the soil conservationist, "We bought this place to spend our retirement years enjoying the study of nature. We would like to have some foot trails to get into the woods."

They want to have the trail skirt the rock ledge on the ridge; go close by the old twisted oak that Indians bent to mark a hunting path; and go through the different soil areas. They want to prune off low-hanging limbs; cut the dead trees that might fall across the trail. They don't want to harvest timber.

These decisions make up their plan. They ask their soil conservation district to furnish equipment and labor to help them do the work.

WILDLIFE may be the main interest of a new owner (below) who has inherited the old home place. He explains, "Dad left the old home place to me. I'm not going to farm it; just want to develop it as a place to hunt deer, grouse, and squirrels. I'll sell some timber, but only if it will help improve hunting."

A habitat appraisal shows the need for cleared strips through the woods to improve feeding places for deer and grouse. The strips are planned to go where the timber is ready for harvest.

Access roads are needed to reach the far corners of the place by jeep. Seedings for the roads are designed to attract grouse. The roads are also good fire insurance.

Thinnings are planned in pole timber to give plenty of space to the crowns of shagbark hickories and oak. This will improve production of mast. Den trees are retained in the hollows and around the border of the woods.

SOME ARE YOUNG MEN with growing families (above). They are conservation-minded but conservation must pay its way.

One of them said recently, "Sure I enjoy hunting, but I've got to make this place pay out. I need to sell some trees for steady income. How can I handle this 100 acres of woods so that new and better trees are always coming on?"

The soil conservationist first explains the soil map and the effects of soils on tree growth and management. Then he helps the owner size up the woods. What kinds of trees are there? What sizes? Quality? Are there too many or too few for best growth? What products can be sold? What conservation practices are needed for protection and improvement of the woods?

When decisions are made and recorded in the basic conservation plan, the landowner is referred to a professional forester.

RECREATION for income (below) is catching the attention of some woodland owners. One said the other day, "I've got a woodlot down by the new road. Might be a good spot to bring in picnickers and campers. I'd like to get some ideas on the possibilities."

Here again the soil map gives some basic information about how drainage, slope, rocks, and other soil features might affect the use of the area.

Plans for treatment of the tree cover involve such things as different degrees of thinning for tent sites and picnic areas; developing natural shrubs for screens, barriers, or landscaping. One thing

is sure—the practices planned will be far different from those used to grow wood products.

WOOD USING industries in many areas are purchasing small tracts of land and combining them into large tree farms. Management of these lands is in the hands of professional foresters (right). One of them says, "As an industrial forester, I've got to make a profit in the woods for my company. To manage this large property we've got to know the soils and their effects on forest growth. I'm a firm believer that tree farming begins with the soil."

For these people, soil maps are the foundation for forest management. When interpreted by soil conservationists they help foresters fit the best kinds of trees to the soil; predict potential yields of wood crops; help decide on what size trees to grow; make tentative locations for woods roads; guide decisions on multiple use; and help cope with soil-related problems like erosion hazard and difficulties in the use of equipment.

So, these days woodland conservation means different things to different people. Soil conservationists are helping landowners define their needs and develop conservation plans which are realistic and useful. Foresters, biologists, and other professional people use these basic plans when the landowner calls on them for specialized help.

Soil conservation districts are finding a growing need to supply services to these new landowners. For example, it is quite common now in West Virginia for an absentee owner to order a planned tree planting job. The district orders the trees, cares for them, prepares the site, builds the fence, and plants the trees at the proper time. This is a sign of the changing times. It points out the need for soil conservationists to recognize the "new look" in woodland conservation and the opportunities it creates. ♦

Wildlife too

(*Continued from p. 177*)

Lawrence silt loam, 0 to 1 percent slopes.
Lebanon silt loam, gray subsoil variant, 0 to 1 percent slopes.
Robertsville silt loam, 0 to 1 percent slopes.

With good management these soils are well suited for grain crops and most grasses and shallow-rooted legumes. Upland and lowland hardwoods and upland conifers do not grow well on those soils; wetland food plants usually do. Shallow water developments and farm ponds are normally successful, as are wetland wildlife and pond fish development.

The soils of Group 4 are suitable for the production of wetland wildlife and pond fish. Management suggestions for wetland wildlife are: Exclude livestock from ponds and lakes to protect aquatic plants that grow along the water's edge. These plants are important as food, nesting cover, and winter cover. Create shallow water areas (3½ to 5 feet deep) by building dams across waterways or by digging in soils having high water tables. When possible, plan to control the water level. Food plants are grown and made available to wildlife by draining or flooding an area at the proper time. Also, unwanted weeds can be controlled by manipulating the water level.

Management recommendations for each wildlife group adapted to each soil group are summarized in the wildlife section of the soil survey report. Detailed specifications are available or are being developed by local conservation technicians assisting the Dent County Soil and Water Conservation District.

Local supervisors of the district feel that the soil survey and the interpretation into wildlife suitability groupings give them the fundamental information for aiding local landowners who wish to improve their wildlife crop. It is their belief that hunting and fishing is an honorable and satisfying activity, and they aim to encourage and help in its development for the betterment of the community. ♦

This Is a Marsh—Mark it Well

By David N. Allan
Biologist, SCS, Durham, N. H.

THE SUN glints on the ruffled surface of the marsh. Rushes and sedges weave back and forth in a dance that creates ever-changing shadows on the water. A redwing clings to a cattail head as he calls out a warning that this is his home. A sandpiper teeters back and forth picking up some choice morsel and startling the chorus of spring peepers.

This is a marsh; a never-still place of ever-changing pattern from winter's ice crystals glinting in the sun to the splash of an autumn flight of ducks.

This is the marsh that many landowners see and cherish. To them it is a source of enjoyment and beauty—not waste land to be drained or used as the town dump.

Let me tell you about some landowners who like marshes.

Farm and sawmill

Peter Braase of Strafford, N. H., owns a small farm and sawmill. His farm is a pleasant place with fields sloping down through an orchard to a low area that was formerly wetland. There are birdhouses on fence and barn that tell you he likes wildlife. The wet spot has now become a combination pond and marsh. Trout break water in the deep pool by the dam, and ducks feed and nest in the shallows at the upper end. Here are 3 acres of new wetland providing a great deal of family enjoyment.

Flooded woodland

In Rochester, N. H., William Champlin owns large areas of managed woodlands, including about 10 acres of flooded hardwoods. Areas have been cut to create open water. Walking the farm road through tall pines you suddenly come upon the flood area. In spring the brushy growth around the edge is filled with the calls and bright flashes of color of migrating warblers. Fall brings a chance for duck hunting. Autumn brings the thrill of seeing black ducks rising with a splash on a cold frosty morning or a flock of teal dropping straight down through the dead trees before the blind.

Swimming pool

In Amherst, N. H., the Lane Fearons have become marsh enthusiasts. What started as a desire for a swimming pool led them to a pond and marsh which offered privacy not found on local lakes. They found the site in an apple orchard. A small stream with an abandoned beaver dam showed them the possibilities. With the help of the Soil Conservation Service, the old dam was removed and replaced by a large earthen dam complete with means of drawing the water down.

The Fearons say, "An unexpected result of the construction was the new interest the family has in the out-of-doors. We hunt some, target practice with gun and bow, do bird watching, and just plain walk. The marsh has become quite a wildlife refuge."

They have built a home on one side of the pond while their daughter's family is building on the other. The elder Fearon's home has a porch hanging out over the water. With large sliding glass doors it brings the pond and marsh into the living room. It is like

Decoys grace the placid pond of one of New Hampshire's new wildlife marshes.

watching a wildlife movie on a wide screen. Muskrats swim by, pushing marsh plants before them. Wild ducks wheel back and forth before skidding in to a landing. Deer come down through the orchard to drink. They have Canada geese, beaver, raccoon, pheasant, ruffed grouse, and woodcock and have even seen bear tracks. The wild things seem little concerned with the human activity around them.

Native shrubs

Many native shrubs bloom along the shores and provide food and nesting cover for birds and animals. On one shore the brush was cut back to bring out the colors of dark green and pink of mountain laurel against a background of white birch.

Lane Fearon has cut lanes, wide enough for a canoe, through the flooded woodlands and placed woodduck boxes in the trees. Pileated woodpeckers create new nests in the drowned out trees.

As the Fearons say, "This family project, begun as recreation for the family, has become much more. It is now a place of deep satisfaction and learning for all of us, including our 2-year-old grandson who on a recent occasion greeted our arrival with a partially asleep snake. It's become a haven for photographer friends, and the warm feeling of pride we get when we see or hear our animals is something one must experience to understand."

Small marshes along the seacoast attract shore birds. One such marsh in a field next to tidewater has given the owner the pleasure of seeing more than 30 species. They nest there or stop off on the spring and fall migrations. Such marshes help fill the needs of sea birds for fresh water for drinking and bathing.

A cottage on the shore invites the visitor to linger by a wildlife pond in the Rockingham Soil Conservation District near Deerfield, N. H.

Community project

Marshes can also become a community project. The town of St. George, Maine, had the problem of repairing a 200-year-old stone bridge on tidewater. The selectmen consulted their local soil conservation district and State highway department for help. By joint effort a small marsh of 10 acres was built. The old bridge was removed and a pipe was laid under the road which forms part of the dam. The marsh has been set aside as a nature area for the townspeople with the right to use the land generously donated by the landowner. It has been named the Watts Cove Wildlife Marsh in memory of Harold Watts, a conservation district supervisor who died shortly after its creation.

In Randolph, N. H., the townspeople have built an 8-acre pond and marsh. Technical assistance was provided by SCS through the Coos County Soil Conservation District. It is part of a town-owned recreation area and fits into the planned land use for nature enthusiasts. The marsh is beside a highway used by summer vacationers. It adds to the natural beauty of the area as it lies at the base of towering Mt. Jefferson in the Presidential Range of the White Mountains.

Five years ago we held a training session for New Hampshire SCS personnel on planning small marshes. At that time there were only 2 or 3 marshes to be shown. Today there are 18 scattered around the State that have been designed and built under the supervision of SCS personnel. More are being planned each year as people realize that they can receive technical help.

It is satisfying to know that people are saving valuable wetlands. New bodies of water and wildlife habitats are being created. Most of them have not been built for a cash return but for the personal enjoyment they provide. ♦

Trout Is New Cash Crop for Tennessee Farm

SCS Assistant State Conservationist N. I. Brown is a customer at John Willy's trout farm.

THE MONEY-MAKINGEST field on John Willy's farm in Hickman County, Tenn., is covered with cold, clear water.

Willy bought 1,015 rolling highland acres in 1950 and launched out on a conventional farming operation.

Much of the farm's open land was idle at this time. Willy became a cooperator with the Hickman County Soil Conservation District in 1952. His early interest was beef cattle and sheep. His first conservation plan called for 153 acres of perennial pasture, 32 acres of alfalfa for hay, 58 acres of cropland for grain and silage, and 500 acres of woodland.

As Mr. and Mrs. Willy went about their daily chores, they kept studying a spring that flowed from under a limestone bluff just across Beaver Creek from their comfortable old-fashioned frame house.

"A spring as clear and cold as that," John Willy said to himself, "should make a good home for trout."

A small pond at the spring outlet was enlarged to about an acre. Trout fingerlings for a trial were provided by the Game and Fish Commission.

"This was not a commercial attempt," Willy said. "We could not sell the trout furnished by the Game and Fish Commission, but, boy, we grew some whoppers. We *knew* that trout would thrive here."

After further consultation with the Game and Fish Commission and SCS biologists, Willy went into the trout business for income.

Four raceways—shallow pools fed by cool overflow from the pond—were constructed. He built a "nursery" in which to hatch his commercially purchased trout eggs.

Willy raised 15,000 trout in 1962 and had them to catching size by April 1, 1963.

"The crop lasted 3 months," he said. "The first month paid for the construction of the pond and raceways, the second month paid for the trout and the feed, and the third month was profit."

Willy says that the trout enterprise has "out-yielded every other cash crop on the place."

For fishermen who want to go all the way, the Willys are preparing a 44-acre camping area, which will be accessible by car and will have cooking units and sanitary facilities.

Through the Cropland Conversion Program, Willy constructed a 3-acre warm water pond for catfish. SCS gave technical assistance on these projects.

Other conservation practices on the farm include crop rotations, pasture, sod waterways, ponds for livestock water, and tree planting.

Because of their close cooperation with the Hickman District, the Willys are considered part of the family by the Hickman board of supervisors. In 1964, Mrs. Willy was selected to represent the board at the National Association of Soil and Water Conservation Districts' Convention at Kansas City, Mo.—TILLMAN E. LEE, *Area Conservationist, SCS, Columbia, Tenn.* ♦

Pond Development Benefits Area

A major pond development program of the Scott County Soil Conservation District, Miss., started in 1946, helps bring prosperity to the area.

Before that time, many farmers hauled water for livestock in the summer from large ponds of neighbors and from nearby creeks.

Now there is a flourishing livestock industry, and much of the cutover second growth timberland and overcropped land has been converted to permanent pastures.

Altogether 2,176 SCS-designed ponds have been built, with 211 ponds in 1965 alone, and more than 100 built annually in 5 out of the last 8 years. ♦

Many Nations in Soil Congress

Nearly every nation in the Western Hemisphere is represented in some way in the First Pan American Soil Conservation Congress coming next month in Sao Paulo, Brazil.

At the Congress scheduled for April 12-29, speakers will discuss the great opportunities that modern science and technology offer for land and water resource development in the Americas to meet rising needs for food, improve the welfare of rural people, promote economic growth, and increase foreign exchange earnings.

More than 500 people are expected to attend.

Major speakers at the meeting will include conservation authorities from several nations including SCS Administrator Donald A. Williams, and ASCS Administrator Horace D. Godfrey.

Nine SCS employees will present papers at the Congress. ♦

SCS Team To Help Thailand Farmers

Four veteran SCS conservationists left recently for northeastern Thailand, where they will spend the next 2 years helping Thai farmers under an AID agreement.

The team will work with the Land Development Division of the Thai government. They will train Thai technicians in working with local government officials and farmers to improve the agriculture of northeastern Thailand. The training will be in techniques of soil and water conservation, good land use, cropping patterns, irrigation improvements, and use of soil amendments.

The team also will give training in techniques of improving range and pasture resources to permit an increase in the livestock enterprise.

Improvements in soil and water resources and farming methods will enable Thai farmers to increase their income as well as meeting increasing needs for food.

Team leader is J. Dale Schott, Iowa assistant State conservationist. Other members are Darrell L. Gallup, soil scientist, Hyattsville, Md.; Charles A. Bordsen, work unit conservationist, Glendive, Mont.; and Clyde T. Lowe, work unit conservationist, Payson, Utah.

Schott and Gallup will be stationed at Bangkok, while Bordsen and Lowe will work out of Khon Kaen.

Northeastern Thailand is characterized by a shifting type of agriculture, in which land is plowed and cropped—mainly in dryland rice—for two or three seasons and then allowed to return to brush for 6 to 10 years before it is plowed again. Rainfall is sparse except during the monsoon season. ♦

Pasture Pump Protects Ponds

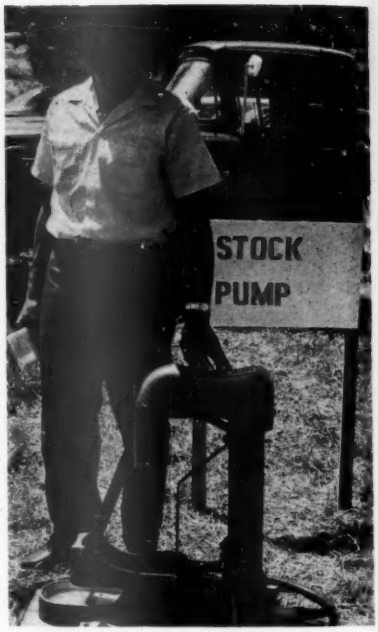
A NEW TYPE of pasture pump is providing a solution to the problem of trampled shores and muddy water in dugout ponds where water for livestock cannot be piped by gravity to a tank outside a protective fence.

Supervisors of several soil conservation districts in Vermont keep a supply of the pumps for sale to cooperators for immediate installation

The pumps are automatic and designed so that cattle, by their drinking action, can pump their own water, clear and fresh from protected ponds. No electricity, labor, or supervision are required.

There are at least two designs on the market, and they have solved many cattle-watering problems. One pump is a displacement type piston unit with double stroke action. It has a vertical lift of up to 24 feet and a horizontal suction to 300 feet. It will supply 6 gallons of water a minute to its trough of 2 quarts capacity.

Experience is convincing many district cooperators that the new cattle watering method works well with modern conservation practices. In the White River and Otter Creek soil conservation districts farmers are switching from dugout ponds to pasture pumps.



District Supervisor Gerald Sawyer shows off a livestock water pump in a visit to the soil conservation district, Vermont.

Wes Larrabee, a farmer in Shoreham, Vt., said his cows prefer the water from two pasture pumps over regular pond water or a running brook.

No longer do cattle have to wade into ponds, pushing in the sides, muddying the water. Farmers are spared the further problem of mud-caked udders at milking time, and with ponds fenced off grass grows down to the water's edge providing a more attractive and healthier impoundment.

Maintenance is very high on ponds that are not fenced off from cattle, and some need to be re-dug every 5 years.

Most County ASCS Committees in Vermont have voted ACP cost shares on pasture pumps.—ROBERT E. COLLINS, *Work Unit Conservationist, SCS, Middlebury, Vt.* ♦

Potomac Model Plan Stresses Land Treatment

THE *Potomac Interim Report to the President,* recently submitted by the Secretary of the Interior in response to the President's directive that a "model conservation plan" be prepared for the Potomac River Basin, makes soil and water conservation a major part of the proposed program.

One of eight summary paragraphs recommends:

"That soil conservation measures for the reduction of erosion and sedimentation and the construction of small headwater reservoirs be accelerated and that the George Washington National Forest be expanded to provide public access to the North and South Forks of the Shenandoah above their confluence."

The other recommendations propose an extensive program of park and recreation developments and the preservation of natural areas and wild rivers.

More detailed recommendations backing up the published report provide for a 10-year program stepping up Federal, State, and local land use adjustment and treatment activities of the kind carried out under authorities of the Department of Agriculture.

These include accelerated conservation work on farms, small watershed projects, erosion control on highways and secondary roads, completion of the soil survey in the basin, and immediate construction of upstream watershed structures primarily for recreation purposes at about 40 sites within the national forests.

The report also recommends extension of existing authority for upstream watershed improvements such as are now being carried out under the 1944 Flood Control Act to the entire Potomac basin.

The interim report was prepared by the Federal Interdepartmental Task Force on the Potomac, consisting of Kenneth Holum, Assistant Secretary of the Interior, chairman; John A. Baker, Assistant Secretary of Agriculture, who was represented by Hollis R. Williams, Deputy Administrator for Watersheds of SCS; Eugene W. Weber, Deputy Director of Civil Works, Chief of Engineers, representing the Department of the Army; and James M. Quigley, Assistant Secretary of the Department of Health, Education, and Welfare.

Also participating was a Potomac River Basin Advisory Committee, consisting of three representatives each of Maryland, Pennsylvania, Virginia, West Virginia, and the District of Columbia under the chairmanship of James J. O'Donnell of Maryland.

Technical material was developed and considered by subtask forces of the Interdepartmental Task Force composed of representatives of the participating and some other Federal agencies and the States.

The subtask forces were: (1) Sedimentation and Erosion, H. O. Ogrosky, SCS, chairman; (2) Water Supply and Flood Control, H. E. Schwarz, Corps of Engineers, chairman, with Carl D. Fetzer, SCS, representing the Department of Agriculture; (3) Water Quality, Keith Krause, Public Health Service, chairman, with Lloyd M. Reed, SCS, representing USDA; and (4) Recreation and Landscape, Robert M. Paul, Department of the Interior, chairman, with Ralph C. Wilson, SCS, and S. L. Cuskelly, Forest Service, representing USDA. ♦

Cooperation in RC&D Projects

In Resource Conservation and Development projects all segments of the community—rural, suburban, and urban—can work together to solve local problems and improve resource use. Local groups must initiate projects. ♦

Woodland Managed as Sugar Bush

(*Photo on back page.*)

FOR 25 YEARS Ralph C. Grosvenor of Claridon Township, Ohio, has produced an average of 350 gallons of maple sirup a year on his 20-acre managed woodland. He also has harvested over 141,000 board feet of timber by regularly thinning out his trees to improve his stand.

Grosvenor has been a cooperator with the Geauga County Soil Conservation District since it was organized in 1944. With the help of SCS technicians, he has carried out a basic conservation plan on his 170-acre farm.

The farm has been in the family since the early 1800's and maple sirup has been produced there since soon after the Civil War. Ralph Grosvenor took over the management of the farm from his father about 1920.

In the management of his woodland, Grosvenor's primary aim has been improvement of the sugar bush. He started his woodland management program in 1941 as a USDA forestry project. In 1944, Grosvenor made the first of three selective timber cuttings, scheduled at 5-year intervals to permit proper root development and to reduce wind damage. He sold the cut timber as logs, sawed lumber, and blocking. He used scrap logs and limbs for fuel.

After the final selective cut in 1959, Grosvenor and the farm forester, Ohio Division of Forestry and Reclamation, developed a timber stand improvement program to remove remaining unwanted woodland growth.

Today, Grosvenor manages a neat and thrifty woodland where a few bramble patches remain to provide good environment for wildlife and protection for hardwood seedlings.—GEORGE J. NEWBERGER, *Work Unit Conservationist, SCS, Burton, Ohio.* ♦

Farm Plans Build a New Community

THROUGH cooperation with each other and diligent attention to their farm plans, land owners and operators in Florida's Holmes Creek Soil Conservation District have developed a successful farming community in the "worthless redlands" of the State's Panhandle Section.

The land in the Holmes Creek District is highly erodible, and for many years crops were planted in the bottoms where soil couldn't run away.

Even under this system, however, the fields were ruined by sediment from the highlands where gullying was severe, and farmers barely made out with a few rows of corn and some cotton.

Today, under conservation practices the land in the area is considered some of the best in Holmes County, and new farm machinery, as well as the old in good condition, indicates a measure of prosperity. The farms vary in size from just a few acres to several hundred. All the land owners and operators are Negroes.

Holmes Creek SCD Cooperator Marvin Long gets some facts about his farm plan from Work Unit Conservationist Malcolm Reddoch.

Leonard Gainer, Holmes SCD cooperator, has the proud look of a successful farmer as he stands beside his peanut combine.

Typical among the 30 to 40 farm families is Leonard Gainer who farms 120 acres of his own and 80 acres of rented land in a community where many people are related and the Gainer name is most prevalent.

Malcolm Reddoch, Work Unit Conservationist in the Holmes SCD, said Gainer's father, Will, was the first Negro cooperator in the district. It impresses Reddoch that the people keep their farm plans right up to date. Many of them call him at least three or four times each year for assistance.

"Not only do they keep the plans up to date," he said, "they keep them handy where they can be referred to any time they are needed."

This is the spirit throughout the district where one farmer brings his stripcrop or contour up to his landline and his neighbor continues the practice on his land.

A short distance from Mr. Gainer's place is the 140-acre general farm of Marvin Long. Mr. Long has been a cooperator for only little over a year, but has completed a parallel terracing system, and next season he plans to put in grassed waterways.

He said gullies had become a problem and crop washouts were frequent. Now things are changing rapidly for the better and he credits the soil conservation practices he installed recently.—RAYMOND A. DAY, *Soil Conservationist, SCS, Gainesville, Fla.* ♦

New Wildlife Board to Advise USDA

Secretary of Agriculture Orville L. Freeman has appointed a Wildlife Advisory Board to advise and consult with the Department in setting up the new Cropland Adjustment Program, authorized by the Food and Agriculture Act of 1965, aimed at removing from surplus production up to 40 million acres of cropland.

Emphasis will be in shifting this land into public-benefit uses which will also conserve soil, water, and wildlife to meet future needs.

The board includes:

Edwin A. Jaenke, associate administrator, Agricultural Stabilization and Conservation Service, chairman; Harry L. Graham, National Grange; Clinton R. Gutermuth, Wildlife Management Institute; Dr. Weldon K. Haynie, chairman, Oklahoma State Game and Fish Commission; James A. Hodge, farmer, Mullins, S. C.; Thomas L. Kimball, executive director, National Wildlife Federation; Otto C. Maerklein, Jr., North Dakota Wildlife Federation; Phillip W. Schneider, director, Oregon State Game Commission; James T. Shields, director, Minnesota Game and Fish Division; William E. Towell, director, Missouri Conservation Commission; and Lester P. Voigt, director, Wisconsin Conservation Department.

Lloyd E. Partain, SCS, will be a consultant to the board and chairman in Mr. Jaenke's absence. Fred G. Ritchie, ASCS, will serve as executive secretary. ♦

CONSERVATION PROFILE

Seavey A. Piper

Maine

Conservationist still runs farm of his boyhood

GIANTS come in many sizes! Seavey A. Piper, though small in stature, is a giant in the field of soil conservation.

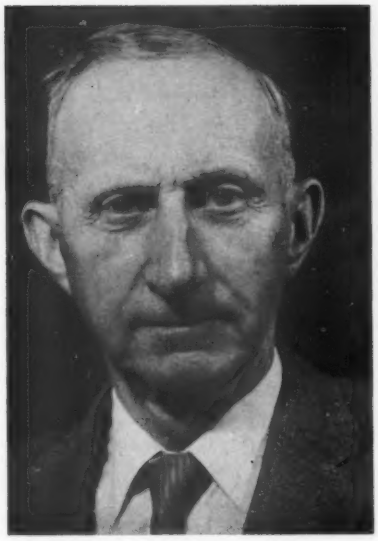
Mr. Piper's home town is Troy, a small Maine farming community 30 miles south of Bangor. There he gained his first farming experience as a lad of 8 when he carried the lantern for his uncle on early morning and evening chores. Today, he and his son Clinton operate the same 350-acre farm together. In the meantime, he has won a reputation for conservation leadership in his own Waldo County and throughout the State of Maine.

While still a young man, Piper noticed the erosion on his farm and was concerned about it. When the Waldo County Soil Conservation District was formed, Piper was one of the first farmers to apply soil conservation practices on his land.

He has served as a supervisor of the district for the past 14 years, including 2 years as chairman. Now he is secretary-treasurer of his home district and chairman of the State Soil Conservation Committee.

Piper's formal education began in a one-room school. After 3 years of high school and a 2-year course in agriculture at the University of Maine, he returned home to take over the management of the farm.

Each year Piper travels hundreds of miles promoting the conservation and development of natural resources. Well known and



highly respected by many Maine legislators, he led the campaign which resulted in the revision of the State Soil and Water Conservation District Enabling Act. He has appeared many times before State hearing committees promoting soil and water conservation.

In 1949, the University of Maine honored Mr. Piper as one of Maine's Outstanding Farmers. Recently he was selected as the Outstanding Conservationist by the Northeast Chapter of the Soil Conservation Society of America.

He has served as a selectman of his town for nearly 30 years. Among other duties, he has been active in 4-H Club work, the Farm Bureau, and Extension work. ♦

Ponds Stop Water Hauling on Farm

Ponds built on a 140-acre farm near Lake, Miss., put an end to hauling water in drums. H. W. Hollingsworth, who moved to Lake 3 years ago, says "I have four ponds and they really help me out. I'm proud of them. They were hauling water to this place in drums when we bought it. There's no running water through here. There's a little creek but it dries up."

These ponds helped in establishing a fine beef cattle operation. ♦

Quality of the Environment: An Economic Approach to Some Problems of Using Land, Water, and Air. By Orris C. Herfindahl and Allen V. Kneese. *1965. Resources for the Future, Washington, D. C. (Johns Hopkins Press, Baltimore). 96 pp., paper. $2.*

This publication is the report of one of Resources for the Future's studies of the "quality of environment" as affected by some uses of land, water, and air. It presents results of the study and proposes a research strategy for continuing surveillance of the problem.

To the question, "When are we going to run out of our natural resource products?," the authors reply, "Long before that happens we will suffer a deterioration in the quality of our environment."

Whatever the degree of deterioration, economic reasoning can aid in formulating a plan to minimize its detrimental effects; "namely, the balancing of our varied desires in these matters against the costs of satisfying them in various degrees."

The need for investigators to have knowledge of several scientific disciplines is emphasized. It is especially important for economists studying environmental qualities to know something of the natural sciences and engineering subject matter involved.

The major environmental problems are: (1) Water pollution, (2) air pollution, (3) use of chemicals as pesticides, (4) use of urban space, and (5) use of rural areas.

Each problem is considered in a separate chapter, considering ways in which improvements might be made. The conservation program of the Soil Conservation Service is deeply involved with each of the

five major environmental problems. —T. B. PLAIR, *Woodland Conservationist, SCS, Washington, D. C.*

Trail Planning and Layout. BY BYRON L. ASHBAUGH. *1965. National Audubon Society, New York. 104 pp., illus. $2.50.*

This book is a welcome treatment of a phase of outdoor recreation of rapidly growing importance. While the trail is only a means to an end, it is often the major development on areas devoted to the enjoyment of natural areas and nature education. How well the trail is conceived, designed, built, and fitted with interpretive facilities determines its usefulness.

There are *kinds* of trails according to the subjects observed, such as woodland, vegetation, animal homes, wildflowers, soils and geology, and the like. Or, they may be classed according to the kind of environment, such as forest, wilderness, farm, or underwater. Too, the mode of transportation may classify the trails, as hiking, horseback, cycling, or boating. These and others are covered in this volume. Only trails for use by power vehicles — motorcycle, snowmobile, etc.—are omitted, possibly with intent.

Chapters cover background and perspective, design, construction and maintenance, trail features, signs, labels and guides, and teaching on the trail.—F. C. EDMINSTER, *Resource Development Division, SCS, Washington, D. C.*

Wildlands in Our Civilization. EDITED BY DAVID BROWER. *1964. Sierra Club, San Francisco. 175 pp., illus. $5.75.*

This book, mainly a collection of essays and statements from previous publications of the Sierra Club, brings together in one place an exposition of the concept of wilderness as a land use and the reasons for a National Wilderness System.

A foreword by Editor Brower and an introduction by Wallace Stegner, both well-known spokesmen for the wilderness idea, restate their case for the wilderness bill, which was enacted into law at about the time the book went to press.

Eight choice papers from the first five Biennial Wilderness Conferences and related essays elucidate the wilderness theme. The book concludes with abbreviated summaries of the five conferences.

As usual with Sierra Club books, handsome photographs superbly reproduced speak fully as eloquently as the words.—B.O.

Wildlife Biology. BY RAYMOND F. DASMANN. *1964. John Wiley and Sons, Inc., New York. 231 pp., illus. $5.95.*

Anyone seriously concerned with the welfare of wildlife should read this book. It is an introduction to the basic biologic principles of modern wildlife management.

The book is not long, only 231 pages of which about 35 are used for illustrations. The writing is concise and the reasoning exceptionally clear.

Especially recommended are chapter 3 on ecological ideas, chapter 4 on wildlife habitat, and chapter 10 on wildlife and land use. Dasmann has a refreshingly realistic understanding of the key role of the private landowner in the production of fish and wildlife.—LAWRENCE V. COMPTON, *Head Biologist, SCS.*

New Publications

The Great Plains Conservation Program. *1965. USDA PA 669. 16 pp., illus.* Updating the record of progress of the program, this report shows that 395 counties in the 10 Great Plains States are now eligible for help, 19,900 farmers and ranchers are cooperating, and 39,200,000 acres are covered by complete soil and water conservation plans. It also gives statistics on the acreage of unsuitable cropland converted to conservation uses and conservation practices applied with cost-sharing.

What Is a Farm Conservation Plan? BY SOIL CONSERVATION SERVICE. *1965. USDA PA 629. 8 pp., illus.* Superseding Leaflet 249, "What Is a Conservation Farm Plan?," this bulletin explains the need for a plan and how to make one and describes the assistance available from the Soil Conservation Service through local soil conservation districts.

Further Reading in Land Use Biology

The following publications by SCS biologists are available from the Soil Conservation Service:

Making Land Produce Useful Wildlife. BY WALLACE L. ANDERSON. *1961. USDA Farmers' Bul. 2035. 29 pp., illus.*

Wild Ducks on Farmland in the South. BY WILLIAM W. NEELY AND VERNE E. DAVISON. *1966. USDA Farmers' Bul. 2218. 16 pp., illus.*

More Wildlife Through Soil and Water Conservation. BY WALLACE L. ANDERSON AND LAWRENCE V. COMPTON. *1963. USDA Inf. Bul. 175. 16 pp., illus.*

Soil Conservation Tips for Sportsmen. BY PHILIP F. ALLAN AND FELIX SUMMERS. *1959. USDA PA 400. 4 pp., illus.*

How to Plan a Shooting Field in the Northeast and Corn Belt. BY PHILIP F. ALLAN, OLAN W. DILLON, JR., AND H. GRANVILLE SMITH. *1964. USDA Leaflet 532. 8 pp., illus.*

Autumn Olive for Wildlife and Other Conservation Uses. BY PHILIP F. ALLAN AND WILMER W. STEINER. *1965. USDA Leaflet 458. 8 pp., illus.*

Russian-Olive for Wildlife and Other Conservation Uses. BY A. E. BORELL. *1962. USDA Leaflet 517. 8 pp., illus.*

Wild Turkeys on Southeastern Farms and Woodlands. BY DALE H. ARNER AND VERNE E. DAVISON. *1963. USDA Leaflet 526. 8 pp., illus.*

Warm Water Ponds for Fishing. BY W. W. NEELY, VERNE E. DAVISON AND LAWRENCE V. COMPTON. *1965. USDA Farmers' Bul. 2210, 16 p., illus.*

Lespedezas for Quail and Good Land Use. BY VERNE E. DAVISON. *1960. USDA Leaflet 373. 8 pp., illus.*

Trout in Farm and Ranch Ponds. BY ADREY E. BORELL AND PAUL M. SCHEFFER. *1961. USDA Farmers' Bul. 2154. 18 pp., illus.*

Waterweed Control on Farms and Ranches. BY VERNE E. DAVISON, JOHN M. LAWRENCE AND LAWRENCE V. COMPTON. *1962. USDA Farmers' Bul. 2181. 22 pp., illus.*

From the Administrator:

• *Model in the Potomac*
• *Cooperation for Wildlife*

WATERSHED treatment of the kind advocated by the Soil Conservation Service makes up a substantial part of the emerging plan to make the Potomac River Basin a "model" of conservation.

This is evident in the progress report recently submitted to the President by the Secretary of the Interior in response to the charge contained in the White House Message on Natural Beauty. The preliminary plan gives reassuring prominence to land treatment and upstream water-control structures as a basis for safeguarding the natural resources of the area.

While the President's emphasis was on "scenic and recreational values," the Interdepartmental Task Force designated to prepare a plan of action wisely recognized that the river and its environs could not be made or kept a satisfying habitation for people without correcting the cancerous effects of erosion and sedimentation.

The interim report sketches the broad outlines of the comprehensive plan as evolved in the first year's study. While many problems need further investigation, some of the basin's conservation needs are plainly evident and call for prompt action. On these, the preliminary report recommends immediate action.

Among the most important of the initial proposals are (1) the expansion and acceleration of land use adjustments and soil and water conservation treatments on private land, and (2) the prompt installation of upstream watershed reservoirs at suitable sites within the National Forests of the basin and their development for recreational use.

These activities can proceed under existing authorities of the Department of Agriculture as soon as funds are made available. Moreover, they provide logically for the installation of needed measures starting at the top of the watershed and working down.

It is also recommended that action be taken to extend the existing authority for upstream watershed improvements under the Flood Control Act of 1944 to the entire basin.

The basic conservation treatment of the uplands of the entire basin and protection of its watercourses will lay a solid foundation for the extensive system of parks and recreation areas, scenic and natural preserves, hiking and auto trails, and wild rivers and lakes envisioned for the enjoyment of people living in and visiting the Potomac basin.

As taking shape in the preliminary report, the plan promises to make the historic river that embraces the Nation's capital a worthy model of river basin planning and development.

Even before the plan becomes reality on the land, it can serve as a model in another way—in the participation and cooperation of the various agencies concerned with land and water resources at both Federal and local levels.

Top-level administrators and technicians learned firsthand from this experience what USDA and SCS watershed planning parties in the field have long recognized—that any watershed or river basin is a complex combination of resources, all important in different ways to different people, so that a satisfactory plan can be achieved only by the joint participation of all concerned.

The fair representation of all resource interests and levels of Government on the Interdepartmental Task Force and the cooperative spirit that characterized their work already stands as a model for river basin planning everywhere.

ANOTHER EXAMPLE of cooperation in resource planning is gaining strength in the joint committee set up by the Department of the Interior and Department of Agriculture to review and resolve problems concerning wildlife in small watershed projects.

The small watershed program has enormous opportunities for constructive wildlife improvements. In many watersheds in many States, these opportunities have been seized by the local sponsoring groups, including fish and wildlife agencies.

But sometimes, because of lack of information or due to misunderstanding, the fish and wildlife potentials have not always been realized. Conflicts of opinion regarding land use occasionally hampered the full realization of opportunities for habitat improvement.

The committee, made up of representatives of the Fish and Wildlife Service and the Soil Conservation Service, already is demonstrating that most differences can be resolved—or at least offset by constructive action—when the interests concerned review the facts impartially and seek practical measures to accomplish mutual goals.

The recent appointment by the Secretary of Agriculture of a Wildlife Advisory Board to make recommendations on programs and policies affecting wildlife of the Cropland Adjustment Program is further evidence of the consideration being given all resources in the Department's land use programs.

D. A. WILLIAMS

UNITED STATES
GOVERNMENT PRINTING OFFICE
DIVISION OF PUBLIC DOCUMENTS
WASHINGTON, D. C. 20401

OFFICIAL BUSINESS

POSTAGE AMD FEES PAID
U. S. GOVERNMENT PRINTING OFFICE

DOCUMENTS
JUN 1 1966
MICHIGAN STATE UNIVERSITY LIBRARIES

If your address changes, please notify us of your complete new address, including Zip Code number and include old address with our code number as shown above.

Boiling Down the Maple Sap

Story on page 187

Ralph Grosvenor prepares to empty a tank of maple sap into storage tanks at the sugar house on his farm in Geauga County, Ohio. Steam rises from the sugar house where the sap is boiling down.

When the sap is running, the Grosvenors may have all their meals at the sugar house, which is equipped with a fold-away table, chairs, and an icebox cupboard.

Grosvenor used lumber from his woodland to build the sugar house and a lean-to shelter for the team of horses. ♦